



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,884	08/10/2004	Akihiro Mano	22040-00034-US1	4883

30678 7590 02/15/2006

CONNOLLY BOVE LODGE & HUTZ LLP  
SUITE 800  
1990 M STREET NW  
WASHINGTON, DC 20036-3425

EXAMINER
----------

EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/710,884

Applicant(s)

MANO ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-9 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 18 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Dittman et al. (USPN 5763854).

Dittman teaches a method of soldering an electronic device comprising the steps of printing a cream solder on a contact on a circuit substrate having a metal terminal on the back surface and performing solder joining via laser which can be positioned to heat only one portion of the device at a time (figures 3 and 7, abstract, col 4 lines 20-55 and col 6 lines 15-47). It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls.

3. Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsushita (JP 05-069182 A, IDS).

Matsushita teaches a method of soldering an electronic device comprising the steps of printing a cream solder on a contact on a circuit substrate having a metal terminal (2) on the back surface and performing solder joining via laser (figure 3 and

Art Unit: 1725

abstract). It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls.

4. Claims 1, 4, 5, 6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Takanashi et al. (USPN 5842627).

Takanashi teaches a method of soldering an electronic device comprising the steps of printing a cream solder on a contact on a circuit substrate having a metal terminal (52) on the back surface, performing solder joining via laser and supplying cold air to the surface such that the surface reaches a prescribed temperature (figures 9 and 12, col 3 line 56 – col 7 line 16, col 4 line 60 – col 5 line 7 and col 7 lines 5-37). It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takanashi et al. (USPN 5842627).

Art Unit: 1725

Takanashi teaches a method of soldering an electronic device comprising the steps of printing a cream solder on a contact on a circuit substrate having a metal terminal (52) on the back surface, performing solder joining via laser and supplying cold air to the surface such that the surface reaches a prescribed temperature (figures 9 and 12, col 3 line 56 – col 7 line 16, col 4 line 60 – col 5 line 7 and col 7 lines 5-37). Cold air is applied directly to solder via pipes 42 and toward other areas via pipe 47 (figures 4, 7 and 9). It is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls. However there is no disclosure of only applying cold air to areas away from solder.

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ at least one cooling pipe that directs cooling air to areas away from solder to control cooling of the assembly and prevent warping of the substrate.

### ***Response to Arguments***

7. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., radiation only on the side of the terminal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore the 102 rejection of claims 1 and 4 as anticipated by Matsushita stands and applies to new article claims 5 and 9. Again it is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls. There is nothing new in the article.

8. Regarding applicant's argument Takanashi does not teach radiating the only the side of the terminal see figures 13 and 14, which show radiation only on the rear (protruding) portion of the terminal.

Therefore the 102 rejection of claims 1 and 4 as anticipated by Takanashi stands and applies to new claims 5, 6 and 9. Again it is noted that an identical structure can be formed by other methods including but not limited to oven and vapor phase reflow of preformed solder balls. There is nothing new in the article.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sinkunas (USPN 6168070 B1, side laser), Sinkunas et al. (USPN 6583385 B1), Izumi et al. (USPN 5289966) and Hayakawa et al. (USPN 4788403).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571)

Art Unit: 1725

272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

*LRE 2/10/06*

LRE